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# *GM Series Internal Combustion Engines (ICE)*

Our GM series engines supply power to progressing cavity pumping (PCP) systems. Specifically, they serve as the prime movers for the systems' AC generators and hydraulic pumps. Driven by natural gas or propane, the engines are ideally suited for remote locations with limited or no access to power. Electronic governors, along with the capability to tolerate the normal wear and tear of outdoor use without an engine enclosure, contribute to their durability and ease of maintenance.

GM series ICE engines are available in four models: the 4.3L, 5.7L, 5.7L high output (HO) and the 5.7L dual mixer (DM). All models have high power-to-weight ratios, with output capacities of 52 and 71 brake horsepower (BHP) at 1,800 rpm, respectively. The 5.7L HO and DM are ideally suited to run applications where horsepower falls between 84- and 91-hp on propane.



## *Applications*

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- Providing power to a broad range of applications including, but not limited to, PCP systems, pump jacks, and power generation



## *Features, Advantages and Benefits*

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- The capability to run on natural gas or propane renders the engines ideally suited for remote locations with limited or no access to power. Natural gas is often readily available at the wellsite.
- The SAE No. 3 flywheel housing enables the engines to be connected to multiple PCP components—including the generator, hydraulic pumps, and twin-disk clutch systems. This flexibility expands the engines' range of applications on PCP systems and enhances operational efficiency.
- An optional tin cover protects the engines from the elements; however, the GM series is designed to endure the normal wear and tear of outdoor use without an enclosure, thereby facilitating routine maintenance.
- Electric governor maintains engine RPM under a wide range of load capacities. Using an electric governor versus a mechanical governor improves engine efficiency and reduces maintenance costs.
- The GM series engines for PCP systems operate with low capital-investment constraints.
- Engine sealing system uses composite cylinder-head gaskets with steel cores, one-piece rear main-crankshaft seal, one-piece oil-pan seal, and molded rocker-cover seals.
- The GM engines have sintered, powdered-metal, exhaust-valve seat inserts for enhanced durability.



## GM Series Internal Combustion Engines (ICE)

### Specifications

#### Engines

Model	GM 4.3L	GM 5.7L	GM 5.7L HO	GM 5.7L DM
Rating	52 BHP at 1,800 rpm <sup>a</sup> on LPG	78 BHP at 1,800 rpm <sup>a</sup> on LPG	91 BHP at 1,800 rpm <sup>a</sup> on LPG	84 BHP at 1,800 rpm <sup>a</sup> on LPG
Displacement (in. <sup>3</sup> , L)	262 (4.3)	350 (5.7)		
Bore (in., mm)	4.0 (101.6)			
Stroke (in., mm)	3.48 (88.39)			
Compression ratio	9.2:1.1			
Ignition system	Delco EST			
Timing (propane and natural gas)	25° BTDC at 1,800 rpm			
Electric governor	Woodward L Series			
Mixer	Impco Model 200/225			
Spark plugs	AC Delco 41-932 (0.027-in. gap)			
Firing order	1-6-5-4-3-2	1-8-4-3-6-5-7-2		
Valve lash	Nonadjustable			
Idle speed (rpm)	850			
Length (in., cm)	45 (114)	50 (127)		
Width (in., cm)	27 (68)	34 (87)		
Height (in., cm)	38 (96)	43 (110)		
Dry weight (lb, kg)	970 (441)	1,166 (530)		
Oil type	SAE 10W-30 SG/SH			
Oil capacity without Luberfiner (qt, L)	4.5 (4.3)	6.0 (5.7)		
Oil capacity with Luberfiner (qt, L)	17.1 (16.1)	18.3 (17.3)		
Oil pressure (psi, kPa)	15.0 to 50.0 (103.4 to 344.7)			
Low-oil shutdown setting pressure (psi, kPa)	15 (103.4)			
Oil filter	AC Delco AC-PF52		AC Delco AC-PF52	
Coolant designation	50-50 Ethylene Glycol		50-50 Ethylene Glycol	
Coolant capacity (qt, L)	19.0 (17.9)	25.0 (23.6)		
Coolant shutdown setting temperature (°F, °C)	210.0 (98.8)			
Charging system	AC Delco 12 Volt			
Battery	485 CCA minimum			
Fuel setting (natural gas)	5.5 to 6.0 in. WC at idle (3 to 3.3 oz)			
Fuel setting (propane) <sup>b</sup>	2.0 to 2.5 in. WC at idle (1 to 1.5 oz)			
Regulator orifice size (in., cm)	1/4 to 5/16 (0.6350 to 0.7938)			5/16 to 3/8 (0.7938 to 0.9525)

<sup>a</sup>Rating assumes propane fuel and 2,000 ft (609.6 m) elevation.

<sup>b</sup>With engines operating on LPG, a low-pressure regulator (LPR) should be installed. The LPR is designed to supply the correct gas pressure to the mixer. Regulators must not be mounted further than 18 in. (45.7 cm) from the mixer for best operation.

## GM Series Internal Combustion Engines (ICE)

### Specifications *(continued)*

#### Heat-Value Ratings\*

Fuel	Heat Value
Vaporized propane (BTU/ft <sup>3</sup> )	2,300
Ethane gas (BTU/ft <sup>3</sup> )	1,700
Methane gas (BTU/ft <sup>3</sup> )	962

\*BTU value at rated HP

#### Horsepower Derating

Altitude	3% per 1,000 ft, above 500 ft 3% per 300 m, above 150 m
Temperature	2% per 10°F, above 85°F 2% per 5°C, above 30°C

### Options

- Heavy-duty engine heads are available for extreme operating conditions.
- An engine shutdown system is available.
- Electric or analog panels are offered.
- Tin covers are available to protect engine from the elements.

### Technical Support

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